NWS: EHB-6, Maintenance Note 24
DoD: TO 31P1-4-108-581
FAA: EEM Modification Handbook 6345.1 CHG 13, Chap 12

REPLACEMENT OF TRANSMITTER PARAMETER RECORD CARD

DOPPLER METEOROLOGICAL RADAR WSR-88D

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COMMERCE, THE AIR FORCE, THE NAVY, AND TRANSPORTATION

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1. SUBJECT

Replacement of Transmitter Parameter Record Card.

2. PURPOSE

This document provides instructions to replace the Transmitter Parameter Record Card located on the Transmitter Control Panel. The replacement record card is the result of several changes to values in the Operational Limits column. In addition, the RDASOT program will be used to operate the transmitter at short pulse width and pulse repetition frequency (PRF) number 5 to obtain new transmitter parameter values.

NOTE: This change has been reviewed and evaluated for impact upon year 2000 (Y2K) functionality and has no detrimental effect upon Y2K compliance issues.

For additional information concerning this document, contact the Operational Support Facility, Hotline, Norman, Oklahoma; phone number: (800) 643-3363 or (405) 366-2980 or by email at Hotline@osf.noaa.gov. An electronic copy of this document can be found at the following address: www.osf.noaa.gov/ssb/sysdoc/techman/tmlinks.htm

3. SITES AFFECTED

This document applies to all NWS, DoD, and FAA Radar Data Acquisition (RDA) sites.

4. ESTIMATED COMPLETION DATE

The target completion date is 60 days after receipt of this document.

5. EQUIPMENT AFFECTED

Radar Data Acquisition (RDA) Group.

6. SPARES AFFECTED

Not applicable.

7. MODIFICATION ACCOMPLISHED BY

Site electronic technicians will accomplish this task. One technician is required to perform these procedures.

8. MATERIAL REQUIRED

Nomenclature	Qty
Transmitter Parameter Record Card	1

9. SOURCE OF MATERIALS

See ATTACHMENT 2.

10. SPECIAL TOOLS AND TEST EQUIPMENT REQUIRED

Not applicable.

11. TIME AND PERSONNEL REQUIRED

Work Phases	AFSC Skills	Work-Hours
Unpacking	2E051	0.1
Disassembly	2E051	0.0
Installation	2E051	0.1
Assembly	2E051	0.0
Operational Check	2E051	0.2
Total Work-Hours		0.3

12. DOCUMENTS AFFECTED

Operations and Maintenance Instructions Transmitter System, dated 30 July 1999
NWS EHB 6-511, Change 1
AF TO 31P1-4-108-112, Change 1
FAA TI 6345.1 V8, Change 1

13. VERIFICATION STATEMENT

Not applicable.

14. DISPOSITION OF REMOVED AND REPLACED PARTS/MATERIALS

Discard replaced Transmitter Parameter Record Card per local procedures.

15. PROCEDURES

See ATTACHMENT 1 for procedures.

See ATTACHMENT 2 for replacement Transmitter Parameter Record Card.

16. FAA DISTRIBUTION

This directive is distributed to selected offices and services within Washington headquarters, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, regional Airway Facilities divisions, and Airway Facilities field offices having the following facilities/equipment: NXRAD.

17. CHANGES TO TABLE OF CONTENTS (FAA)

This chapter will be included in the next revision to the table of contents for FAA Order 6345.1, Electronics Equipment Modification Handbook - Next Generation Weather Radar (NEXRAD).

18. RECOMMENDATIONS FOR CHANGES (FAA)

Forward any recommendations for changes to this directive through normal channels to the National Airway Systems Engineering Division, AOS-200, Operational Support.

19. REPORTING INSTRUCTIONS

a. NWS

Report completed action on WS Form A-26, Engineering Management Reporting System Maintenance Record, according to instructions in EHB-4, Part 2, using reporting code RDA. Also, record the modification number in block 17(a) as M24 (see ATTACHMENT 4 for a completed sample of WS Form A-26).

b. DoD

Update the AFTO Form 95 to show TCTO compliance. Report TCTO compliance in accordance with TO 00-20-2, Table 3-10, Rule 9.

c. FAA (Changes to Recorded Data)

Enter this document number, date, and chapter number in the appropriate FAA Form 6032-1, Airway Facilities Modification Record.

d. All Agencies

Complete ATTACHMENT 3 and fax or mail information to:

(1) Mail Address: System Support Branch, System Documentation Section
Operational Support Facility
3200 Marshall Ave., Suite 203
Norman, Oklahoma 73072-8028

(2) Fax Number: (405) 366-6553
ATTN: System Documentation Section

ATTACHMENT 1

REPLACEMENT OF TRANSMITTER PARAMETER RECORD CARD

1. To obtain new transmitter parameter values in short pulse width and PRF 5, transfer transmitter control to the RDA terminal in order to terminate the RDA software program and load the RDASOT program.

2. At the Unit Control Position (UCP) Applications Terminal, perform the following steps:

   a. Verify RPG Main Menu is displayed. If not, press key **<F1>** to display RPG Main Menu.

   b. On RPG Main Menu, select RDA Control Menu by typing **RD<Return>** on command line.

   c. Check RDA control field in the status area. If control field displays `RDA CNTL RPG` proceed to next step. If control field displays `RDA CNTL RDA` or `RDA CNTL (BLANK)` proceed to step 3.

   d. Enable local control of RDA by typing **EN<Return>** on command line of RDA Control Menu.

3. At the RDA site, with the RDA Maintenance Terminal in application mode, perform the following steps:

   a. If RDA Maintenance Terminal is in system console mode, press **<Shift>** and **<Port>** keys simultaneously. Observe cursor moves to lower half of screen (if in split-screen mode) or an Application Terminal menu appears (if in full-screen mode). Sites with RDA/RPG Remote Access Terminal (RRRAT), use the mouse to move between system console and application modes, or by pressing the **<Alt><Tab>** keys simultaneously.

   b. Verify RDA Main Menu is displayed. If not, type **MAIN<Return>** on command line of the current menu to obtain RDA Main Menu.

   c. At the RDA Main Menu, request local control from UCP by typing **RELC<Return>** on command line. Observe `RELC - ACCEPTED` is displayed on feedback line of menu.

4. Terminate the RDA program and place the RDA in standby mode by performing the following steps at the RDA Maintenance Terminal:

   a. Enter **STBY<Return>** at the command line. **NWS and FAA redundant systems:** Procedure can be performed on off-line channel. Once completed, perform procedure on other channel.

   b. Enter **TERP<Tab>***password***<Return>** and observe `TERP ACCEPTED` is displayed.

   c. Press **<Shift>** and **<Port>** keys simultaneously and wait for application tasks to terminate, approximately 30 seconds. Sites with RRRAT, use the mouse to move to application screen, or by pressing the **<Alt><Tab>** keys simultaneously.

ATTACHMENT 1 (Continued)

REPLACEMENT OF TRANSMITTER PARAMETER RECORD CARD

5. To load the RDASOT program and select the pulse width and PRF, proceed as follows:

   a. Put the RDA Maintenance Terminal in system console mode.

   b. Type **RDASOT<Return>** to load RDASOT program. Observe `Mode Selection Menu` is displayed.

   c. If using a redundant system, **unless otherwise noted**, enter **2<Return>** to select LIMITED mode and proceed to next step.

   d. Enter **4<Return>** and observe `Manual Control and Display Menu` is displayed.

   e. Enter **2<Return>** and observe `TestSig Test Control Menu` is displayed.

   f. Enter **4<Return>** to select Klystron Output Source. Observe `Klystron Output Source Control Menu` is displayed.

   g. Enter **9<Return>** to select pulse width. Observe `Pulse Width Selection Menu` is displayed.

   h. Enter **1<Return>** to select short pulse. Observe `Pulse Width Repetition Frequency (PRF) Selection Menu` is displayed.

CAUTION

Always press HIGH VOLTAGE to OFF on the transmitter before selecting a new PRF. If HIGH VOLTAGE is ON and a different pulse width is selected, damage to the PFN switch may result.

   i. Enter **5<Return>** to select PRF 5. Observe `Klystron Output Source Control Menu` is displayed.

   j. At Transmitter Control Panel 3A1, place CONTROL MAINT/SYSTEM switch/indicator in **MAINT** position. Observe MAINT indicator is lit (white), and SYSTEM indicator is not lit.

   k. At Transmitter Control Panel 3A1, press transmitter CONTROL HV ON/NO CONTROL switch/indicator. Observe HV ON indicator is lit (white), and NO CONTROL indicator is not lit.

   l. At metering section, observe FOCUS COIL CURRENT meter 3A1M2 indicates klystron nameplate value +/- 0.5 ampere.

m. At RDA Maintenance Terminal Klystron Output Source Control Menu, type **1<Return>** to input signal.

n. Observe PFN voltage meter indicates 4800 +/- 300 volts.

6. Obtain the replacement Transmitter Parameter Record Card from ATTACHMENT 2.

7. At the Transmitter Control Panel 3A1, rotate switch 3A1S9 to position 1 and observe the reading on VOLTAGE/CURRENT meter 3A1M4. Annotate the reading on line 1 under the M4 READING (SP/PRF5) column on the replacement Transmitter Parameter Record Card.

8. Continue rotating switch 3A1S9 through positions 2 through 15 and annotate the readings on the appropriate line under the M4 READING (SP/PRF5) column.

9. Return switch 3A1S9 to position 16 (OFF) upon completion of obtaining all readings.

10. At the RDA Maintenance Terminal enter **<Return>** to end test.

11. Terminate the RDASOT program by performing the following steps:

a. At the Transmitter Control Panel 3A1, press transmitter CONTROL HV OFF/NO CONTROL switch/indicator. Observe HV OFF indicator is lit (white), and NO CONTROL indicator is not lit.

b. At the RDA Maintenance Terminal system console, type **Ø<Return>** repeatedly until RDASOT Main Menu is displayed. Enter **<Return>** when asked `DO YOU WISH TO EXIT WITH THE SYNCHRONIZER RUNNING?`

c. Enter **Ø<Return>** and observe RDASOT program terminates and Main Menu scrolls off screen.

d. At Transmitter Control Panel 3A1, place CONTROL MAINT/SYSTEM switch/indicator in **SYSTEM** position. Observe SYSTEM indicator is lit (white), and MAINT indicator is not lit.

12. At the RDA Maintenance Terminal system console, type **RDAUP<Return>.** Observe RDA Console Mode operation display logo appears.

13. After RDA terminal is up, shift to application mode by pressing **<Shift>** and **<Port>** keys simultaneously. Sites with RRRAT, use the mouse to shift between screens, or by pressing the **<Alt><Tab>** keys simultaneously.

14. Type **OPER<Return>** at the RDA Maintenance Terminal command line.

ATTACHMENT 1 (Continued)

REPLACEMENT OF TRANSMITTER PARAMETER RECORD CARD

15. Place the newly annotated replacement Transmitter Parameter Record Card in the card holder on the front panel of the Transmitter Control Panel UD3A1.

16. **NWS and FAA redundant sites**, repeat steps 4 through 15 on other channel.

17. Enable remote control by typing **ENRC<Return>** on command line.

ATTACHMENT 2

REPLACEMENT OF TRANSMITTER PARAMETER RECORD CARD

TOOLS REQUIRED:

Scissors

1. Cut out the Transmitter Parameter Record Card along the dotted line and place in the card holder on the front of the Transmitter Control Panel UD3A1/UD103A1.

3A1S9 POS	TX-PARAMETER	M4 READING (SP/PRF5)	HIGH VOLTAGE	OPERATIONAL LIMITS
1	+5.0 Vdc		OFF/ON	+/- 0.5 V
2	+15.0 Vdc		OFF/ON	+/- 0.5 V
3	-15.0 Vdc		OFF/ON	+/- 0.5 V
4	+28.0 Vdc		OFF/ON	+/- 1.0 V
5	+45.0 Vdc		OFF/ON	+/- 1.5 V
6	+280.0 Vdc		OFF/ON	240 - 370 V
7	FPA FIL. P.S.		ON	40 - 70
8	FPA FIL. VOLT		ON	NAMEPLATE +/- 2.0 V
9	FPA FOCUS COIL P.S.		ON	40 - 85
10	FPA VACUUM PUMP P.S.		ON	2.75 - 4.00
11	FPA CATHODE CURRENT		ON	20 (PRF1) - 95 (PRF8)
12	FPA BEAM VOLTAGE		ON	20 (PRF1) - 95 (PRF8)
13	MOD INVERSE CURRENT		ON	2 (PRF1) - 20 (PRF8)
14	PFN CHARGE CURRENT		ON	0.5 (PRF1) - 4.5 (PRF8)
15	REGULATOR CURRENT		ON	5 - 20
16	OFF			

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ATTACHMENT 3

REPLACEMENT OF TRANSMITTER PARAMETER RECORD CARD RETURN FORM

Site Name: _____

Site Identifier: _____

Total Time to complete this Maintenance Note/TCTO/EEM: _____

Technician's Name(s): _____

Technician's Phone Number: _____

Date Completed: _____

Problem(s) Encountered:

_____

_____

_____

_____

Upon completion of this form, mail or fax this information to the OSF:

1. Mailing Address: System Support Branch, System Documentation Section
   WSR-88D Operational Support Facility
   3200 Marshall Ave., Suite 203
   Norman, OK 73072-8028

2. FAX Number: (405) 366-6553
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